

## Math 10 Final Course Review Answers

### A: Conversions and Measurement:

**Convert:** 1a) .91125 miles, b) 330 cm; **Solving Problems:** 1a) 236 feet squared, b) 262 feet cubed, 2)  $162\text{m}^2$  3)  $75\text{ cm}^3$

### B: Trigonometry:

1a)  $\angle A = 44.415^\circ$ ,  $\angle B = 45.584^\circ$  b) Missing side = 4.89, 2)  $x = 6.8829\text{ mm}$ , 3)  $\angle B = 70.016^\circ$  4a) .5592, b) .5299, c) 1.0356 5)  $57.3^\circ$  6)  $\angle A = 56^\circ$ ,  $\angle C = 90^\circ$ ,  $\overline{AB} = 31.11$ ,  $\overline{BC} = 25.79$  **Problem Solving:** 1) The flagpole is 21 m tall 2) The escalator is 7.4 m high

### C: Factors and Products:

1a)  $6x^2 + 20x - 16$  b)  $6x^2 - 30x + 45$  c) 49 2a)  $2x \times 3x \times 3x \times 3x = 2^2 \times 3^3$  3a) 6 b) 12 4a) 60 b) 80 5) square root = 8, cube root 4 6a)  $6n(n-3)$  b)  $2xy^2(3x^2 + y^3)$  7a)  $(a+9)(a-2)$  7b)  $(x-7)(x-1)$  c)  $(3v-2)(v-2)$  8a)  $(d+4)(d-4)$  b)  $(w-7)(w-7)$  9a)  $8(x-3y)(x+3y)$

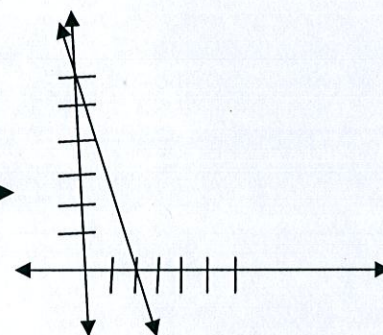
### D: Roots and Powers:

1a)  $6\sqrt{2}$  b) 4 c)  $7\sqrt{3}$  2a)  $\sqrt{28}$  b)  $\sqrt[3]{75}$  3a)  $\approx 7.2$  b)  $\approx 3.1$  4a) Rational

b) Irrational 5a)  $\frac{1}{6}$  b) 9 c)  $(\sqrt[3]{15})^2$  7a)  $5^{\frac{3}{2}}$  8a) 256 b)  $\frac{1}{x^{\frac{5}{2}}}$  c)  $8x^2y$

### E: Functions and Relations:

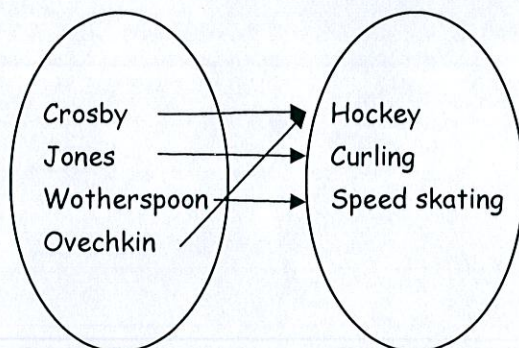
- 1) Yes it is a function by the Vertical Line Test
- 2) X intercept is 2 and Y intercept is 6



3a) It is a function because the athletes are all different b)

$D = \{\text{Crosby, Jones, Wotherspoon, Ovechkin}\}$ ,  $R = \{\text{Hockey, Curling, Speed skating}\}$

c)





d) It is a function because the minutes do not repeat

e)  $D = \{10, 20, 30, 40, 50\}$ ,  $R = \{2, 4, 6, 8, 10\}$

f) Dependent Variable is the cost and the Independent Variable is the number of minutes.

g) It is linear. Mathematically we could see if the changes in each variable was constant. Graphically we could see if the relation graphs into a straight line.

4a)  $D = \{-4 \leq x < 2\}$ ,  $R = \{-4 \leq y \leq 8\}$  b)  $D = \{x \geq -3\}$ ,  $R = \{y \leq 5\}$

5a) She makes a flat fee of \$30 plus an additional \$5 for each survey.  $P(n) = 5n + 30$

b) \$70 If 8 surveys are completed then she makes \$70 c) 12, 12 surveys would have had to have been completed to make \$90

6)

X	-2	-1	0	1	2
Y	0	1	2	3	4

It is linear.

7a) Dependent Variable is the Volume and the Independent Variable is the Time.

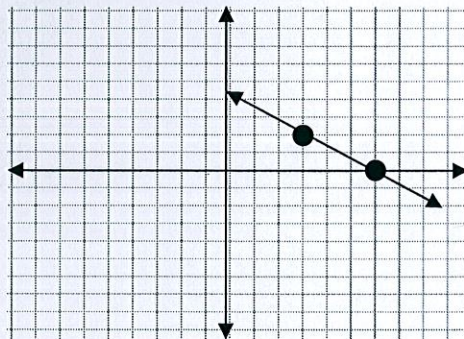
b) Rate of change is 20 liters/min. The tub fills at a rate of 20L/min.

### F: Linear Functions:

1) Slope =  $\frac{3}{5}$  and the y intercept is -4

2) 2a) slope is -1 b) slope is  $\frac{3}{5}$

c)



d) the lines are perpendicular because their slopes are negative reciprocals of each

other 3a)  $y - 5 = 3(x - 2)$  b)  $y - 3 = 0$  c)  $y = 1x - 3$  d)  $3x - y = 1$ ,  $3x - y - 1 = 0$ ,  $y = 3$ ,  $y - 3 = 0$ ,  $x -$

$y = 3$ ,  $x - y - 3 = 0$  e)  $y + 3 = -\frac{3}{4}(x - 2)$ , f)  $y - 1 = -\frac{2}{3}(x - 3)$  g)  $x - 2y = 4$ ,  $x - 2y - 4 = 0$